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BULLETIN
OF THE
TORREY BOTANICAL CLUB.

Vol. VII.]

New York, February, 1880.

[No. 2.]

§ 5. **Proceedings of the Torrey Club.**—The regular monthly meeting of the Club was held at the "Herbarium," Columbia College, Tuesday evening, Feb. 10. In the absence of the President and Vice-President, Mr. J. D. Hyatt was called to the Chair. There were 24 members and 4 visitors present.

The following errors in the minutes, which also crept into our preceding report, were corrected: *Stellaria media*, not *Cerastium arvense*, was found in flower Jan. 11th; and the double-bracted *Cornus* was exhibited by Mr. Schrenk, not by Mr. Britton, as stated.

Mr. LeRoy exhibited a specimen in flower of *Sarracenia flava*, L., the roots of which had been brought from the swamps of South Carolina.

Mr. Wright of Staten Island exhibited a black-flowered Iris, raised from a bulb direct from Egypt.

Mr. J. D. Hyatt exhibited a remarkable and beautiful woody gall, the leaf-like lobes of which were curiously carved and almost seemed executed by the hand of an artist. The specimen came from Mexico.

Mr. Hollick, in behalf of the Map Committee, presented a large geological map of the district embraced within the limits of the Torrey Catalogue, the joint work of himself and Mr. Britton.

The Case Committee reported that the new case for the herbarium of the club had been purchased, and was now ready for the inspection of members.

Mr. Samuel Henshaw was elected a member; and the names of two other persons were proposed for membership.

At the suggestion of Mr. Leggett, Mr. W. R. Gerard was elected assistant editor of the BULLETIN.

Dr. Jarvis read a paper on "Galls." The author, who has made a life-long study of these organisms, briefly reviewed the opinions that have been held in regard to their formation from the earliest times up to the present, and boldly took issue with Darwin, Huxley and others in regard to the statement that these excrescences were of insect origin. He asserted that these gentlemen had merely accepted the statements of others without personal investigation of the facts. Dr. Jarvis claimed, and it was the object of his paper to prove, that all galls are normal productions of the plants on which they grow; and that these productions, by a species of evolutions of the protoplasm contained within them, eventually gave birth to animal life. The life history of these beings, from the formation of the primordial utricle up to the period when they make their egress in a perfect state from the zoocarp (as the author styles the gall), was minutely described by means of large diagrams and numerous specimens of galls derived from various plants.

Owing to the lateness of the hour, the botanical paper of the evening, by Mr. Hollick, on the "Relation between Geological Formations and the Distribution of Plants," was merely read by title and handed to the Editor for publication in the BULLETIN.

§ 6. **Relations between Geological Formations and the Distribution of Plants.**—The notes, from which this paper was compiled were taken during the past season on Staten Island and are, therefore, very restricted and local in their nature; but even within such narrow limits, the effect which the geological formation seems to have on its accompanying flora is so marked, that it seems of vast importance, alike to the practical botanist in his collecting tours, and as a field of speculation for the theorist.

We have, on Staten Island, two well marked geological features—the *Drift*, which covers about two-thirds of the entire Island, nearly all the northern part and extending as far south as Princes Bay, and the *Cretaceous*, which occupies the remaining small area in the southern and western part. This latter is a continuation of the New Jersey clay beds.

The geological line of separation between the two formations is not always very distinct, but the limits of the different species of plants mark it in unmistakeable characters. The two floras are remarkably distinct. That one belonging to the Cretaceous is well represented by *Arctostaphylos Uva-ursi*, *Aster concolor*, *Pinus inops*, *Quercus Phellos*, *Quercus nigra*, *Lycopodium inundatum*, var. *Bigelovii*, and many more of the Pine Barren plants. Thus far I have never found one of these species to have crossed the line of the Drift, but in their stead will be found *Pinus rigida*, *Quercus alba*, *Quercus rubra*, etc., and the majority of those plants which grow in the vicinity of New York Island, and up the Hudson.

Those plants which belong to the Drift seem to adapt themselves more readily to the Cretaceous than "vice versa," for while we find *Quercus alba* and *Pinus rigida* growing in Cretaceous clays and sands, the *Quercus Phellos* and *Pinus inops* have never been seen out of their natural geological location. The same may also be said of the more northern species of *Aster*, which occur quite plentifully with *Aster concolor*, but this latter will not spread beyond the Cretaceous. It would be interesting to know if these facts hold good in other localities. It almost seems as if the Drift flora were gaining on the Cretaceous and gradually crowding it off the Island.

A curious and interesting case of restricted locality, due apparently to geological causes, is seen in *Clematis ochroleuca*, which only grows on the dry hills of magnesian rocks which form the main ridge of the Island and in the vicinity of the Limonite ore deposits.—It is accompanied by *Cerastium oblongifolium*, which likewise seems equally restricted. Do these same conditions prevail in other localities where these comparatively rare plants occur?—In an isolated hammock of soapstone and iron ore, fully three-fourths of a mile away from the ridge, and having no intermediate connections, *Clematis ochroleuca* was found. Probably by others, who have had a wider area for research, many more instances of a similar nature may have been